

## REMARKS

By the present amendment, claims **1, 4, 14, 25-29, 31, 32, 34, 35, 40, 43, 53, 64-68, 70, 71, 73, 74, 80 – 82, 85, 89, 95-98, 102 and 107** have been amended, claims **24 and 63** have been cancelled, and no new claims have been added. Accordingly, claims **1-23, 25-62, 64-82, 85-99, 101-103 and 105-112** are presently pending, and favorable reconsideration thereof is respectfully requested. Claims **1, 4, 14, 31, 35, 40, 43, 53, 70, 74, 80-82, 85, 89, 95-98, 102 and 107-112** are the independent claims.

Applicant wishes to thank the Examiner for the careful review of the present application and the prior art. Applicant also wishes to thank the Examiner for the withdrawal of the previous grounds of rejection, and for the allowance of claims **108-112**.

### **35 U.S.C. § 112, 2<sup>nd</sup> paragraph**

The Examiner has objected to independent claims **1, 40, 80-82, 89, 95-98, 102 and 107**, on the ground that the phrase “for use in producing a representation of said environment” is a statement of intended use and raises a question as to the limiting effect of such language.

The phrase in question was not intended to be limiting, but rather, was intended to provide additional context to improve the clarity of the claims. In this regard, in view of dependent claim **32** as originally filed, which positively recited “producing said representation of said environment”, it is the applicant’s position that one of ordinary skill in the art would have understood from the doctrine of claim differentiation that this phrase, although limiting in claim **32**, was not limiting in claim **1**. Nevertheless, as the Examiner has expressed the view that the recital of this phrase in claim **1** detracts from rather than improves the clarity of the claims, by the present amendment, independent claims **1, 40, 80-82, 89, 95-98, 102 and 107** have been amended to delete this phrase. Independent claim **85** has also been similarly amended. Corresponding antecedent amendments have also been made to dependent

claims **32** and **71**. Applicant therefore respectfully submits that the objection to independent claims **1**, **40**, **80-82**, **89**, **95-98**, **102** and **107** has been overcome.

The Examiner has objected to dependent claims **2-39**, **41-79**, **86-88**, **90-94**, **99**, **101**, **103**, **105** and **106** as being unclear only because they depend from unclear independent claims. In view of the amendments to the independent claims discussed immediately above, Applicant respectfully submits that this ground of objection is overcome.

**35 U.S.C. § 102(b)**

The Examiner has rejected claims **1-3**, **8**, **9**, **12**, **23**, **32**, **40-42**, **47**, **48**, **51**, **62**, **71**, **79-83**, **85**, **89-91** and **95-97** under **35 U.S.C. § 102(b)** as being anticipated by U.S. Patent No. **4,899,322** to Crutcher et al. ("Crutcher").

By the present amendment, independent claim **1** has been amended to include the limitations of claim **24** previously on file, which the Examiner did not reject under **35 U.S.C. § 102(b)**. Applicant therefore respectfully submits that the rejection of claim **1** is overcome.

Claims **2**, **3**, **8**, **9**, **12**, **23** and **32** are directly or indirectly dependent upon amended claim **1**. Applicant therefore respectfully submits that these claims are allowable due to their dependencies, as well as the additional subject-matter that each of these claims recites.

Independent claim **40** has been amended to include the limitations of claim **63** previously on file, which the Examiner did not reject under **35 U.S.C. § 102(b)**. Applicant therefore respectfully submits that the rejection of claim **40** has been overcome.

Claims **41**, **42**, **47**, **48**, **51**, **62**, **71** and **79** are directly or indirectly dependent upon amended claim **40**. Applicant therefore respectfully submits that these

claims are allowable due to their dependencies, as well as the additional subject-matter that each of these claims recites.

Independent claims **80-82** have been amended to include limitations similar to those of claims **24** and **63** previously on file, which the Examiner did not reject under **35 U.S.C. § 102(b)**. Applicant therefore respectfully submits that these claims are allowable for reasons similar to those applicable to amended claims **1** and **40**.

Claim **83** has been previously cancelled, and thus the rejection of this claim is overcome.

With respect to independent claim **85**, Applicant respectfully submits that the Crutcher reference fails to satisfy the requirements for a finding of anticipation. In this regard, the standard for an anticipation rejection under **35 U.S.C. §102** has been well established by the Court of Appeals for the Federal Circuit, and is summarized in M.P.E.P. § **2131**. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, **2 U.S.P.Q. 2d 1051, 1053** (Fed. Cir. **1987**). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, **9 U.S.P.Q. 2d 1913, 1920** (Fed. Cir. **1989**). " 'For a prior art reference to anticipate in terms of **35 U.S.C. § 102**, every element of the claimed invention must be identically shown in a single reference.' ... These elements must be arranged as in the claim under review ... but this is not an '*ipsissimis verbis*' test ...", i.e., identity of terminology is not required. *In re Bond*, **15 U.S.P.Q. 2d 1566, 1567** (Fed. Cir. **1990**).

Independent claim **83** recites an environment measurement method comprising:

continuously producing data in response to scattered portions of a laser pulse scattered by respective portions of said environment, during

a measurement interval of sufficient duration to receive all said scattered portions; and

storing said data.

As discussed in Applicant's specification (for example, at page 7, line 23 to page 8, line 8 of applicant's specification as filed, which corresponds to paragraphs [0030] to [0031] of Applicant's U.S. Patent Application Publication No. US 2003/0030582 A1), "continuously producing data in response to scattered portions of a laser pulse scattered by respective portions of said environment, during a measurement interval of sufficient duration to receive all said scattered portions" is advantageous over prior art laser measurement systems, as it allows a full set of laser data, rather than merely a first return value, to be obtained for a given laser pulse. This may be particularly advantageous in light foliage conditions, for example, in which case the laser data may include not only a foliage height value, but also a ground height value, as well as one or more intermediate return values corresponding to objects such as foliage at intermediate heights between the foliage height and the ground height.

Crutcher discloses a integrated geophysical survey system, including laser equipment (16) in communication with a processor (26) and an integration and data-recording device. However, Crutcher fails to disclose any details of the laser equipment (16) or its operation. Crutcher therefore fails to disclose "continuously producing data in response to scattered portions of a laser pulse scattered by respective portions of said environment, during a measurement interval of sufficient duration to receive all said scattered portions", as recited in claim 85. Applicant therefore respectfully submits that Crutcher fails to satisfy the requirements for a finding of anticipation of claim 85, and respectfully requests that the rejection of claim 85 be withdrawn.

Independent claim 89 recites an environment measurement system comprising:

a memory device; and

a processor circuit in communication with said memory device, wherein said processor circuit is configured to:

cooperate with a detection system to continuously produce data in response to scattered portions of a laser pulse scattered by respective portions of said environment, during a measurement interval of sufficient duration to receive all said scattered portions, and

store said data in said memory device.

As discussed above in connection with claim **85**, Crutcher fails to disclose a processor circuit configured to cooperate with a detection system to “continuously produce data in response to scattered portions of a laser pulse scattered by respective portions of said environment, during a measurement interval of sufficient duration to receive all said scattered portions”, as recited in claim **89**. Applicant therefore respectfully submits that Crutcher fails to satisfy the requirements for a finding of anticipation of claim **89**, and respectfully requests that the rejection of claim **89** be withdrawn.

Claims **90** and **91** are directly or indirectly dependent upon claim **89**. Applicant therefore respectfully submits that these claims are allowable due to their dependencies, as well as the additional subject-matter that each of these claims recites.

Claims **95-97** recite:

**95.** (Currently amended) An environment measurement system comprising:

means for continuously producing data in response to scattered portions of a laser pulse scattered by respective portions of said environment, during a measurement interval of sufficient duration to receive all said scattered portions; and

means for storing said data.

**96.** (Currently amended) A computer-readable medium storing codes for directing a processor circuit to:

cooperate with a detection system to continuously produce data in response to scattered portions of a laser pulse scattered by

respective portions of said environment, during a measurement interval of sufficient duration to receive all said scattered portions, and

store said data.

97. (Currently amended) A signal embodied in a propagation medium, the signal comprising:

a first code segment for directing a processor circuit to cooperate with a detection system to continuously produce data in response to scattered portions of a laser pulse scattered by respective portions of said environment, during a measurement interval of sufficient duration to receive all said scattered portions, and

a second code segment for directing said processor circuit to store said data.

As discussed above in connection with claim 85, Crutcher fails to disclose “continuously producing data in response to scattered portions of a laser pulse scattered by respective portions of said environment, during a measurement interval of sufficient duration to receive all said scattered portions”, as recited in claim 95, and therefore also fails to disclose codes or code segments for directing a processor circuit to cooperate with a detection system to achieve this, as recited in claims 96 and 97. Applicant therefore respectfully submits that Crutcher fails to satisfy the requirements for a finding of anticipation of claims 95-97, and respectfully requests that the rejections of claims 95-97 be withdrawn.

#### **Claims re-written in independent form**

By the present amendment, claims 4, 14, 31, 35, 43, 53, 70 and 74 have been re-written in independent form, to include the limitations of their respective base claims and intervening claims (if any) previously on file, except that these claims have also been amended to take into account the Examiner's concerns under 35 U.S.C. § 112 in relation to the base claims. It is the applicant's position that the amendments to these claims are not narrowing amendments, in view of the fact that these claims as previously on file were deemed to include the limitations of their base claims and any intervening

claims, by virtue of 37 C.F.R. § 1.75(c). As the Examiner did not reject any of these claims in their previous dependent form under 35 U.S.C. § 102, and the Examiner's § 112 concerns have also been addressed, Applicant respectfully submits that these claims are allowable.

#### **Petition for Extension of Time**

Applicant hereby petitions for a three-month extension of time, to January 14, 2004, for responding to the outstanding Office Action. A check in the amount of \$475 is enclosed as payment of the extension fees for a small entity for a three-month extension of time. The Commissioner is hereby authorized to charge any further fees that may be required, or to credit any overpayment, to Deposit Account No. 06-0713.

#### **Excess Claim Fees**

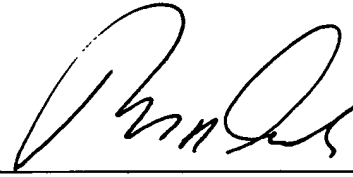
By the present amendment, the total number of claims has decreased by two. The number of independent claims has increased by eight, to a total of 26 independent claims. Applicant paid the required fees for 19 independent claims (16 excess) in respect of the claims as originally filed, and inadvertently submitted an additional fee for a 20<sup>th</sup> independent claim accompanying Applicant's amendment filed April 22, 2003. Accordingly, the number of independent claims now exceeds the number of independent claims previously paid for by six. Applicant therefore encloses a check in the amount of \$258 as payment of the excess claims fees for six additional independent claims. The Commissioner is hereby authorized to charge any further fees that may be required, or to credit any overpayment, to the aforementioned Deposit Account No. 06-0713.

#### **Conclusion**

In view of the foregoing, Applicant respectfully submits that the present application is now in condition for allowance, and respectfully requests that a

Notice of Allowance be issued.

Respectfully submitted,



Ralph A. Dowell  
Reg. No. 26,868

January 14, 2004

Dowell & Dowell  
1215 Jefferson Davis Hwy.  
Suite 309  
Arlington, Va. 22202  
&03-415-2555

Encls: Check for **\$475** for three-month extension of time  
Check for **\$258** for six excess independent claims  
SJF:cat